LG-4878 REV. 9/89

DUPONT

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Wilmington, Delaware 19898

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October 15, 1992

8EHQ-92-12399
INIT
8892000 10607

Document Processing Center (TS-790)
Office of Pollution Prevention and Toxics
Environmental Protection Agency
401 M Street., S.W.
Washington, D.C. 20460
Attn: Section 8(e) Coordinator (CAP Agreement)

Dear Coordinator:

8ECAP-0025

On behalf of the Regulatee and pursuant to Unit II B.1.b. and Unit II C of the 6/28/91CAP Agreement, E.I. Du Pont de Nemours and Co. hereby submits (*in triplicate*) the attached studies. Submission of this information is voluntary and is occasioned by unilateral changes in EPA's standard as to what EPA now considers as reportable information. Regulatee's submission of information is made solely in response to the new EPA §8(e) reporting standards and is not an admission: (1) of TSCA violation or liability; (2) that Regulatee's activities with the study compounds reasonably support a conclusion of substantial health or environmental risk or (3) that the studies themselves reasonably support a conclusion of substantial health or environmental risk.

The "Reporting Guide" creates new TSCA 8(e) reporting criteria which were not previously announced by EPA in its 1978 Statement of Interpretation and Enforcement Policy, 43 Fed Reg 11110 (March 16, 1978). The "Reporting Guide states criteria which expands upon and conflicts with the 1978 Statement of Interpretation. Absent amendment of the Statement of Interpretation, the informal issuance of the "Reporting Guide" raises significant due processes issues and clouds the appropriate reporting standard by which regulated persons can assure TSCA Section 8(e) compliance.

For Regulatee,

Mark H. Christman
Counsel
Legal D-7158
1007 Market Street
Wilmington, DE 19898
(302) 774-6443

RECEIVED
2/17/95

ATTACHMENT 1

Submission of information is made under the 6/28/91 CAP Agreement, Unit II. This submission is made voluntarily and is occasioned by recent changes in EPA's TSCA §8(e) reporting standard; such changes made, for the first time in 1991 and 1992 without prior notice and in violation of Regulatee's constitutional due process rights. Regulatee's submission of information under this changed standard is not a waiver of its due process rights; an admission of TSCA violation or liability, or an admission that Regulatee's activities with the study compounds reasonably support a conclusion of substantial risk to health or to the environment. Regulatee has historically relied in good faith upon the 1978 Statement of Interpretation and Enforcement Policy criteria for determining whether study information is reportable under TSCA §8(e), 43 Fed Reg 11110 (March 16, 1978). EPA has not, to date, amended this Statement of Interpretation.

After CAP registration, EPA provided the Regulatee the June 1, 1991 "TSCA Section 8(e) Reporting Guide". This "Guide" has been further amended by EPA, EPA letter, April 10, 1992. EPA has not indicated that the "Reporting Guide" or the April 1992 amendment supersedes the 1978 Statement of Interpretation. The "Reporting Guide" and April 1992 amendment substantively lowers the Statement of Interpretation 's TSCA §8(e) reporting standard[2]. This is particularly troublesome as the "Reporting Guide" states criteria, applied retroactively, which expands upon and conflicts with the Statement of Interpretation.[3] Absent amendment of the Statement of Interpretation, the informal issuance of the "Reporting Guide" and the April 1992 amendment clouds the appropriate standard by which regulated persons must assess information for purposes of TSCA §8(e).

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[2]In sharp contrast to the Agency's 1977 and 1978 actions to soliciting public comment on the proposed and final §8(e) Policy, EPA has unilaterally pronounced §8(e) substantive reporting criteria in the 1991 Section 8(e) Guide without public notice and comment. See 42 Fed Reg 45362 (9/9/77), "Notification of Substantial Risk under Section 8(e): Proposed Guidance".

[3]A comparison of the 1978 Statement of Interpretation and the 1992 "Reporting Guide" is a appended.

Throughout the CAP, EPA has mischaracterized the 1991 guidance as reflecting "longstanding" EPA policy concerning the standards by which toxicity information should be reviewed for purposes of §8(e) compliance. Regulatee recognizes that experience with the 1978 Statement of Interpretation may cause a review of its criteri. Regulatee supports and has no objection to the Agency's amending reporting criteria *provided that* such amendment is not applied to the regulated community in an unfair way. However, with the unilateral announcement of the CAP under the auspices of an OCM enforcement proceeding, EPA has wrought a terrific unfairness since much of the criteria EPA has espoused in the June 1991 Reporting Guide and in the Agency's April 2, 1992 amendment is new criteria which does not.exist in the 1978 Statement of Interpretation and Enforcement Policy.

The following examples of new criteria contained in the "Reporting Guide" that is not contained in the Statement of Interpretation follow:

o even though EPA expressly disclaims each "status report" as being preliminary evaluations that should not be regarded as final EPA policy or intent[4], the "Reporting Guide" gives the "status reports" great weight as "sound and adequate basis" from which to determine mandatory reporting obligations. ("Guide" at page 20).

o the "Reporting Guide" contains a matrix that establishes new numerical reporting "cutoff" concentrations for acute lethality information ("Guide" at p. 31). Neither this matrix nor the cutoff values therein are contained in the Statement of Interpretation. The regulated community was not made aware of these cutoff values prior to issuance of the "Reporting Guide" in June, 1991.

othe "Reporting Guide" states new specific definitional criteria with which the Agency, for the first time, defines as 'distinguishable neurotoxicological effects'; such criteria/guidance not expressed in the 1978 Statement of Interpretation.[5];

othe "Reporting Guide" provides new review/ reporting criteria for irritation and sensitization studies; such criteria not previously found in the 1978 Statement of Interpretation/Enforcement Policy.

othe "Reporting Guide" publicizes certain EPA Q/A criteria issued to the Monsanto Co. in 1989 which are not in the Statement of Interpretation; have never been published in the Federal Register or distributed by the EPA to the Regulatee. Such Q/A establishes new reporting criteria not previously found in the 1978 Statement of Interpretation/Enforcement Policy .

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[4]The 'status reports' address the significance, if any, of particular information reported to the Agency, rather than stating EPA's interpretation of §8(e) reporting criteria. In the infrequent instances in which the status reports contain discussion of reportability, the analysis is invariably quite limited, without substantial supporting scientific or legal rationale.

[5] *See, e.g,* 10/2/91 letter from Du Pont to EPA regarding the definition of 'serious and prolonged effects' as this term may relate to transient anesthetic effects observed at lethal levels; 10/1/91 letter from the American Petroleum Institute to EPA regarding clarification of the Reporting Guide criteria.

In discharging its responsibilities, an administrative agency must give the regulated community fair and adequate warning to as what constitutes noncompliance for which penalties may be assessed.

> Among the myriad applications of the due process clause is the fundamental principle that statutes and regulations which purport to govern conduct must give an adequate warning of what they command or forbid.... Even a regulation which governs purely economic or commercial activities, if its violation can engender penalties, must be so framed as to provide a constitutionally adequate warning to those whose activities are governed.

Diebold, Inc. v. Marshall, 585 F.2d 1327, 1335-36 (D.C. Cir. 1978). *See also*, Rollins Environemntal Services (NJ) Inc. v. U.S. Environmental Protection Agency, 937 F. 2d 649 (D.C. Cir. 1991).

While neither the are rules, This principle has been applied to hold that agency 'clarification', such as the Statement of Interpretation, the "Reporting Guide" nor the April 1992 amendments will not applied retroactively.

> ...a federal court will not retroactively apply an unforeseeable interpretation of an administrative regulation to the detriment of a regulated party on the theory that the post hoc interpretation asserted by the Agency is generally consistent with the policies underlying the Agency's regulatory program, when the semantic meaning of the regulations, as previously drafted and construed by the appropriate agency, does not support the interpretation which that agency urges upon the court.

Standard Oil Co. v. Federal Energy Administration, 453 F. Supp. 203, 240 (N.D. Ohio 1978), aff'd sub nom. Standard Oil Co. v. Department of Energy, 596 F.2d 1029 (Em. App. 1978):

The 1978 Statement of Interpretation does not provide adequate notice of, and indeed conflicts with, the Agency's current position at §8(e) requires reporting of all 'positive' toxicological findings without regard to an assessment of their relevance to human health. In accordance with the statute, EPA's 1978 Statement of Interpretation requires the regulated community to use scientific judgment to evaluate the significance of toxicological findings and to determining whether they reasonably support a conclusion of a substantial risk. Part V of the Statement of Interpretation urges persons to consider "the fact or probability" of an effect's occurrence. Similarly, the 1978 Statement of Interpretation stresses that an animal study is reportable only when "it contains reliable evidence ascribing the effect to the chemical." 43 Fed Reg. at 11112. Moreover, EPA's Statement of Interpretation defines the substantiality of risk as a function of both the seriousness of the effect and the probability of its occurrence. 43 Fed Reg 11110 (1978). Earlier Agency interpretation also emphasized the "substantial" nature of a §8(e) determination. See 42 Fed Reg 45362, 45363

(1977). [Section 8(e) findings require "extraordinary exposure to a chemical substance...which critically imperil human health or the environment"].

The recently issued "Reporting Guide" and April 1992 Amendment guidance requires reporting beyond and inconsistent with that required by the Statement of Interpretation. Given the statute and the Statement of Interpretation's explicit focus on substantial human or environmental risk, whether a substance poses a "substantial risk" of injury requires the application of scientific judgment to the available data on a case-by-case basis.

If an overall weight-of-evidence analysis indicates that this classification is unwarranted, reporting should be unnecessary under §8(e) because the available data will not "reasonably support the conclusion" that the chemical presents a substantial risk of serious adverse consequences to human health.

Neither the legislative history of §8(e) nor the plain meaning of the statute support EPA's recent lowering of the reporting threshold that TSCA §8(e) was intended to be a sweeping information gathering mechanism. In introducing the new version of the toxic substances legislation, Representative Eckhart included for the record discussion of the specific changes from the version of H. R. 10318 reported by the Consumer Protection and Finance Subcommittee in December 1975. One of these changes was to modify the standard for reporting under §8(e). The standard in the House version was changed from "causes or contributes to an unreasonable risk" to "causes or significantly contributes to a substantial risk". This particular change was one of several made in TSCA §8 to avoid placing an undue burden on the regulated community. The final changes to focus the scope of Section 8(e) were made in the version reported by the Conference Committee.

The word "substantial" means "considerable in importance, value, degree, amount or extent". Therefore, as generally understood, a "substantial risk" is one which will affect a considerable number of people or portion of the environment, will cause serious injury and is based on reasonably sound scientific analysis or data. Support for the interpretation can be found in a similar provision in the Consumer Product Safety Act. Section 15 of the CPSA defines a "substantial product hazard" to be:

> "a product defect which because of the pattern of defect, the number of defective products distributed in commerce, the severity of the risk, or otherwise, creates a substantial risk of injury to the public."

Similarly, EPA has interpreted the word 'substantial' as a quantitative measurement. Thus, a 'substantial risk' is a risk that can be quantified, *See,* 56 Fed Reg 32292, 32297 (7/15/91). Finally, since information pertinent to the exposure of humans or the environment to chemical substances or mixtures may be obtained by EPA through Sections 8(a) and 8(d) regardless of the degree of potential risk, §8(e) has specialized function. Consequently, information subject to §8(e) reporting should be of a type which would lead a reasonable man to conclude that some type action was required immediately to prevent injury to health or the environment.

Attachment

Comparison:

Reporting triggers found in the 1978 "Statement of Interpretation/ Enforcement Policy",43 Fed Reg 11110 (3/16/78) and the June 1991 *Section 8(e) Guide.*

TEST TYPE	1978 POLICY CRITERIA EXIST?	New 1991 GUIDE CRITERIA EXIST?
ACUTE LETHALITY		
Oral	N}	Y}
Dermal	N}	Y}
Inhalation (Vapors)	}[6]	}[7]
aerosol	N}	Y}
dusts/ particles	N}	Y}
SKIN IRRITATION	N	Y[8]
SKIN SENSITIZATION (ANIMALS)	N	Y[9]
EYE IRRITATION	N	Y[10]
SUBCHRONIC (ORAL/DERMAL/INHALATION)	N	Y[11]
REPRODUCTION STUDY	N	Y[12]
DEVELOPMENTAL TOX	Y[13]	Y[14]

[6] 43 Fed Reg at 11114, comment 14:
"This policy statements directs the reporitng of specifiec effects when unknown to the Administrator. Many routine tests are based on a knowledge of toxicity associated with a chemicalL unknown effects occurring during such a range test may have to be reported if they are those of concern tot he Agency and if the information meets the criteria set forth in Parts V and VII."

[7] Guide at pp.22, 29-31.

[8] Guide at pp-34-36.

[9] Guide at pp-34-36.

[10] Guide at pp-34-36.

[11] Guide at pp-22; 36-37.

[12] Guide at pp-22

[13] 43 Fed Reg at 11112
"Birth Defects" listed.

[14] Guide at pp-22

NEUROTOXICITY	N	Y[15]
CARCINOGENICITY	Y[16]	Y[17]
MUTAGENICITY		
In Vitro	Y}[18]	Y} [19]
In Vivo	Y}	Y}
ENVIRONMENTAL		
Bioaccumulation	Y}	N
Bioconcentration	Y}[20]	N
Oct/water Part. Coeff.	Y}	N
Acute Fish	N	N
Acute Daphnia	N	N
Subchronic Fish	N	N
Subchronic Daphnia	N	N
Chronic Fish	N	N
AVIAN		
Acute	N	N
Reproductive	N	N
Reprodcutive	N	N

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[15] Guide at pp-23; 33-34.

[16] 43 Fed Reg at 11112
"Cancer" listed

[17] Guide at pp-21.

[18] 43 Fed Reg at 11112; 11115 at Comment 15
"Mutagenicity" listed/ *in vivo* vs *invitro* discussed; discussion of "Ames test".

[19] Guide at pp-23.

[20] 43 Fed Reg at 11112; 11115 at Comment 16.

CAS # 75-71-8; 75-45-6; 76-14-2; 115-25-3; 71-55-6; 75-28-5
Chem: Dichlorodifluoromethane; chlorodifluoromethane ; 1,2-dichlorotetrafluoroethane; 76-15-3 chloropentalfuoroethane ; octafluorocyclobutane; 1,1,1-trichloroethane (methyl chloroform); 2-methylpropane (isobutane)
Title: Cardiac Sensitization
Date: 3/20/69
Summary of Effects: All compounds capable of sensitizing mammalian heart to epinephrine w/methyl chloroform having the greatest potential

Copies to: T. D. Johnson, Jr.
R. M. Glover, Jr.
D. E. Kvalnes
R. C. Downing
C. L. Gray, Jr.
T. D. Armstrong, Jr.
J. H. James

MR 1049-1

E. I. du Pont de Nemours and Company
Haskell Laboratory for Toxicology and Industrial Medicine

HASKELL LABORATORY REPORT NO. 52-69 MR NO. 1049

Materials Tested:	Haskell Nos.:
1) dichlorodifluoromethane (Freon® 12)	5450-2 5450-3
2) chlorodifluoromethane (Freon® 22)	5503
3) 1,2-dichlorotetrafluoroethane (Freon® 114)	5798-2 (CFR)
4) chloropentafluoroethane (Freon® 115)	5502
5) octafluorocyclobutane (Freon® C-318)	5501
6) 1,1,1-trichloroethane (methyl chloroform)	5890
7) 2-methylpropane (isobutane)	5879

Materials Submitted By: T. D. Armstrong, Jr., Freon® Products Laboratory, Organic Chemicals Department, Chestnut Run

CARDIAC SENSITIZATION

These experiments were carried out in the same manner as previously described in Haskell Laboratory Report No. 14-69. Beagle dogs were exposed to each of the test compounds in the concentration and for the duration shown in Table I. The dogs received a control injection of epinephrine (0.008 mg/kg) intravenously prior to the exposure and a challenge injection (same dosage) after breathing the test material for five minutes, except in the case of the 30-second exposures, at the beginning of the exposure period.

Except for methyl chloroform, all of the compounds studied are in the vapor or gaseous phase at normal ambient temperature and pressure and, therefore, were stored in pressure cylinders. The desired concentrations (calculated) were achieved by delivering a metered volume of the vapor or gas from the cylinder and diluting it with a known volume of air. The flowmeters used for monitoring the volume of test compound had been previously calibrated with each compound by a dry gas test meter. The calculated concentration (volumes per cent) then equals the volume of test compound divided by the total volume of diluting air and compound multiplied by 100.

The vapor of methyl chloroform was generated by using an infusion pump to deliver the solvent into a heated air stream. The concentration of the compound in this case was determined by the method of gas chromatography.

The results are given in Table I in the column headed "Number of Marked Responses." A marked response indicates the development, after the challenge injection of epinephrine, of a cardiac arrhythmia which was considered to pose a serious threat to life.

In one of the Freon® 12 experiments, the oxygen concentration was reduced to a low level (about 8.4 per cent v/v) to determine whether hypoxia combined with exposure to the compound would make the heart more sensitive to epinephrine than would exposure to the compound in the presence of a relatively normal oxygen concentration in the inspired air. In comparing the results following a 30-second exposure to 7 per cent Freon® 12 and air with those following a similar exposure to 7 per cent compound in the presence of the reduced oxygen concentration, there is a suggestion that the combination of hypoxia and exposure to the compound makes the heart more sensitive to epinephrine; however, in view of the small number of animals studied, a firm conclusion cannot be drawn in this regard. A control experiment was conducted in which the dogs breathed the low concentration of oxygen for five minutes without exposure to compound, then a challenge injection of epinephrine was given. There was no evidence of cardiac sensitization; thus, suggesting that this level of hypoxia alone does not sensitize the dog heart to epinephrine.

Exposure to 50 per cent Freon® C-318 caused 83.3 per cent marked responses following the challenge injection of epinephrine. During these exposures the oxygen concentration was found to be slightly less than 10 per cent. In a similar experiment with Freon® C-318, enrichment of the air with oxygen to give a concentration of 20 per cent did not alter the number of marked responses occurring in a different group of animals.

It is concluded, on the basis of these experiments, that all of the compounds studied are capable of sensitizing the mammalian heart to epinephrine, with methyl chloroform having the greatest potential and Freon® 115 and Freon® C-318 having the least.

The following compounds remain to be studied under this project (MR-1049):

propane	difluoroethane (152a)	Freon® 12/Freon® 11/Alcohol Blend
vinyl chloride	chlorodifluoroethane (142b)	dimethyl ether

Report by: Charles F. Reinhardt
Charles F. Reinhardt, M.D.
Chief, Physiology Section

CFR/dyb
March 20, 1969

Approved by: John A. Zapp Jr.
John A. Zapp, Jr.
Director

TABLE I

CARDIAC SENSITIZATION - SUMMARY OF RESULTS

(Epinephrine 0.008 mg/kg)

Test Compound	Concentration (% v/v)	Duration of Exposure (min.)	Number of Dog Exposures	Number of Marked Responses	Per Cent Marked Responses	Comments
Freon® 12	2.5	5	12	0	0.0	
	5.0	5	12	5	41.7	
	7.0	1/2	6	0	0.0	
	13.0	1/2	7	2	28.6	
	0.0	5*	6	0	0.0	O_2 concentration ≤ 8.4 per cent (control for next group with low O_2 concentration).
	7.0	1/2	6	1	16.7	O_2 concentration < 8.4 per cent.
Freon® 22	2.5	5	12	0	0.0	
	5.0	5	12	2	16.7	
Freon® 114	2.5	5	12	1	8.3	
	5.0	5	12	7	58.3	
Freon® 115	15.0	5	13	1	7.7	
	25.0	5	12	4	33.3	
Freon® C-318	10.0	5	12	1	8.3	
	15.0	5	6	1	16.7	
	25.0	5	12	2	16.7	
	50.0	5	6	5	83.3	
	50.0	5	6	5	83.3	O_2 concentration enriched to 20 per cent.
methyl chloroform	0.21-0.25	5	12	0	0.0	
	0.46-0.56	5	18	3	16.7	
	0.97-1.16	5	12	12	100.0	Not well tolerated.
isobutane	2.5	5	12	0	0.0	
	5.0	5	12	4	33.3	
	10.0-20.0	5	6	6	100.0	Not well tolerated.

* Breathed low concentration of oxygen for five minutes with no exposure to compound.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Mark H. Christman
Counsel
E. I. Du Pont De Nemours and Company
Legal D-7010-1
1007 Market Street
Wilmington, Delaware 19898

OFFICE OF
PREVENTION, PESTICIDES AND
TOXIC SUBSTANCES

APR 18 1995

EPA acknowledges the receipt of information submitted by your organization under Section 8(e) of the Toxic Substances Control Act (TSCA). For your reference, copies of the first page(s) of your submission(s) are enclosed and display the TSCA §8(e) Document Control Number (e.g., 8EHQ-00-0000) assigned by EPA to your submission(s). Please cite the assigned 8(e) number when submitting follow-up or supplemental information and refer to the reverse side of this page for "EPA Information Requests".

All TSCA 8(e) submissions are placed in the public files unless confidentiality is claimed according to the procedures outlined in Part X of EPA's TSCA §8(e) policy statement (43 FR 11110, March 16, 1978). Confidential submissions received pursuant to the TSCA §8(e) Compliance Audit Program (CAP) should already contain information supporting confidentiality claims. This information is required and should be submitted if not done so previously. To substantiate claims, submit responses to the questions in the enclosure "Support Information for Confidentiality Claims". This same enclosure is used to support confidentiality claims for non-CAP submissions.

Please address any further correspondence with the Agency related to this TSCA 8(e) submission to:

Document Processing Center (7407)
Attn: TSCA Section 8(e) Coordinator
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
Washington, D.C. 20460-0001

EPA looks forward to continued cooperation with your organization in its ongoing efforts to evaluate and manage potential risks posed by chemicals to health and the environment.

Sincerely,

Terry R. O'Bryan

Terry R. O'Bryan
Risk Analysis Branch

Enclosure 12399A

Triage of 8(e) Submissions

Date sent to triage: APR 20 1995 NON-CAP (CAP)

Submission number: 12399A TSCA Inventory: (Y) N D

Study type (circle appropriate):

Group 1 - Dick Clements (1 copy total)

ECO AQUATO

Group 2 - Ernie Falke (1 copy total)

ATOX SBTOX (SEN) w/NEUR

Group 3 - Elizabeth Margosches (1 copy each)

STOX	CTOX	EPI	RTOX	GTOX
STOX/ONCO	CTOX/ONCO	IMMUNO	CYTO	NEUR

Other (FATE, EXPO, MET, etc.): _____

Notes:

THIS IS THE ORIGINAL 8(e) SUBMISSION; PLEASE REFILE AFTER TRIAGE DATABASE ENTRY

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entire document: (0) 1 2 pages 1, 1st TAB pages 1, TABS

Notes:

Contractor reviewer : PJR Date: 3/22/95

CECATS\TRIAGE TRACKING DBASE ENTRY FORM

CECATS DATA:
Submission # 8EHQ- 1092 - 12399 SEQ. A

TYPE: (INT) SUPP FLWP

SUBMITTER NAME: E. I. Dupont de Nemours and Company

INFORMATION REQUESTED: FLWP DATE:
0501 NO INFO REQUESTED
0502 INFO REQUESTED (TECH)
0503 INFO REQUESTED (VOL ACTIONS)
0504 INFO REQUESTED (REPORTING RATIONALE)

DISPOSITION:
(0639) REFER TO CHEMICAL SCREENING
(0678) CAP NOTICE

VOLUNTARY ACTIONS:
(0401) NO ACTION REPORTED
0402 STUDIES PLANNED/UNDERWAY
0403 NOTIFICATION OF WORKERS/USERS
0404 LABEL/MSDS CHANGES
0405 PROCESS/HANDLING CHANGES
0406 APP/USE DISCONTINUED
0407 PRODUCTION DISCONTINUED
0408 CONFIDENTIAL

SUB. DATE: 10/15/92 OTS DATE: 10/27/92 CSRAD DATE: 02/17/95

CHEMICAL NAME: / CAS#

Freon 12 — 75-71-8
Freon 22 — 75-45-6
Freon 114 — 76-14-2
Freon 115 — 76-15-3

Freon C-318 → 115-25-3
methyl chloroform → 71-55-6
isobutane → 75-28-5

INFORMATION TYPE:		P F C
0201	ONCO (HUMAN)	01 02 04
0202	ONCO (ANIMAL)	01 02 04
0203	CELL TRANS (IN VITRO)	01 02 04
0204	MUTA (IN VITRO)	01 02 04
0205	MUTA (IN VIVO)	01 02 04
0206	REPRO/TERATO (HUMAN)	01 02 04
0207	REPRO/TERATO (ANIMAL)	01 02 04
0208	NEURO (HUMAN)	01 02 04
0209	NEURO (ANIMAL)	01 02 04
0210	ACUTE TOX. (HUMAN)	01 02 04
0211	CHR. TOX. (HUMAN)	01 02 04
0212	ACUTE TOX. (ANIMAL)	01 02 04
0213	SUB ACUTE TOX (ANIMAL)	01 02 04
0214	SUB CHRONIC TOX (ANIMAL)	01 02 04
0215	CHRONIC TOX (ANIMAL)	01 02 04

INFORMATION TYPE:		P F C
0216	EPI/CLIN	01 02 04
0217	HUMAN EXPOS (PROD CONTAM)	01 02 04
0218	HUMAN EXPOS (ACCIDENTAL)	01 02 04
0219	HUMAN EXPOS (MONITORING)	01 02 04
0220	ECO/AQUA TOX	01 02 04
0221	ENV. OCCC/REL/FATE	01 02 04
0222	EMER INCI OF ENV CONTAM	01 02 04
0223	RESPONSE REQEST DELAY	01 02 04
(0224)	PROD/COMP/CHEM ID	01 02 04
0225	REPORTING RATIONALE	01 02 04
0226	CONFIDENTIAL	01 02 04
0227	ALLERG (HUMAN)	01 02 04
(0228)	ALLERG (ANIMAL)	01 02 04
0239	METAB/PHARMACO (ANIMAL)	01 02 04
0240	METAB/PHARMACO (HUMAN)	01 02 04

INFORMATION TYPE:		P F C
0241	IMMUNO (ANIMAL)	01 02 04
0242	IMMUNO (HUMAN)	01 02 04
0243	CHEM/PHYS PROP	01 02 04
0244	CLASTO (IN VITRO)	01 02 04
0245	CLASTO (ANIMAL)	01 02 04
0246	CLASTO (HUMAN)	01 02 04
0247	DNA DAM/REPAIR	01 02 04
0248	PROD/USE/PROC	01 02 04
0251	MSDS	01 02 04
0299	OTHER	01 02 04

TRIAGE DATA: NON-CBI INVENTORY
(YES)
CAS SR NO
[illegible]

ONGOING REVIEW
YES (DROP/REFER)
NO (CONTINUE)
REFER

SPECIES
DOG

TOXICOLOGICAL CONCERN:
(LOW)
MED
HIGH

USE:

PRODUCTION:

COMMENTS

8(E)-12399A-01	
NAME(S): FREON 12/DICHLORODIFLUOROMETHANE	
CAS #: 000075-71-8	
STUDY TYPE: SEN	TOX CONCERN: L

FREON 12: INHALATION CARDIAC SENSITIZATION IN BEAGLE DOGS IS OF LOW CONCERN. THE DOGS RECEIVED A CONTROL INJECTION OF EPINEPHRINE (0.008 MG/KG) INTRAVENOUSLY PRIOR TO EXPOSURE AND A CHALLENGE INJECTION (0.008 MG/KG) AFTER BREATHING THE TEST MATERIAL, EXCEPT FOR THE 30 SECOND EXPOSURES, FOR WHICH THE EPINEPHRINE INJECTION WAS ONLY AT THE BEGINNING OF THE EXPOSURE PERIOD. CONCENTRATION, DURATION OF EXPOSURE AND NUMBER OF MARKED RESPONSES (DEVELOPMENT OF A CARDIAC ARRHYTHMIA) ARE AS FOLLOWS: 2.5% FOR 5 MINUTES (0/12); 5.0% FOR 5 MINUTES (5/12); 7.0% FOR 30 SECONDS (0/6); OR 13.0% FOR 30 SECONDS (2/7). IN ANOTHER EXPERIMENT, A CONCENTRATION OF OXYGEN LESS THAN 8

PROD: H

8(E)-12399A-02

NAME(S):	
FREON 22/CHLORODIFLUOROMETHANE	
CAS #: 000075-45-6	
STUDY TYPE: SEN	TOX CONCERN: L

FREON 22: INHALATION CARDIAC SENSITIZATION IN BEAGLE DOGS IS OF LOW CONCERN. THE DOGS RECEIVED A CONTROL INJECTION OF EPINEPHRINE (0.008 MG/KG) INTRAVENOUSLY PRIOR TO EXPOSURE AND A CHALLENGE INJECTION (0.008 MG/KG) AFTER BREATHING THE TEST MATERIAL FOR 5 MINUTES. CONCENTRATION AND NUMBER OF MARKED RESPONSES (DEVELOPMENT OF A CARDIAC ARRHYTHMIA) ARE AS FOLLOWS: 2.5% (0/12) OR 5.0% (2/12).

PROD: H

8(E)-12399A-03	
NAME(S): FREON 114/1,2-DICHLOROTETRAFLUOROETHANE	
CAS #: 000076-14-2	
STUDY TYPE: SEN	TOX CONCERN: L
FREON 114: INHALATION CARDIAC SENSITIZATION IN BEAGLE DOGS IS OF LOW CONCERN. THE DOGS RECEIVED A CONTROL INJECTION OF EPINEPHRINE (0.008 MG/KG) INTRAVENOUSLY PRIOR TO EXPOSURE AND A CHALLENGE INJECTION (0.008 MG/KG) AFTER BREATHING THE TEST MATERIAL FOR 5 MINUTES. CONCENTRATION AND NUMBER OF MARKED RESPONSES (DEVELOPMENT OF A CARDIAC ARRHYTHMIA) ARE AS FOLLOWS: 2.5% (1/12) OR 5.0% (7/12).	

PROD: H

8(E)-12399A-04

NAME(S):	
FREON 115/CHLOROPENTAFLUOROETHANE	
CAS #:	
000076-15-3	
STUDY TYPE:	TOX CONCERN:
SEN	L

FREON 115: INHALATION CARDIAC SENSITIZATION IN BEAGLE DOGS IS OF LOW CONCERN. THE DOGS RECEIVED A CONTROL INJECTION OF EPINEPHRINE (0.008 MG/KG) INTRAVENOUSLY PRIOR TO EXPOSURE AND A CHALLENGE INJECTION (0.008 MG/KG) AFTER BREATHING THE TEST MATERIAL FOR 5 MINUTES. CONCENTRATION AND NUMBER OF MARKED RESPONSES (DEVELOPMENT OF A CARDIAC ARRHYTHMIA) ARE AS FOLLOWS: 15.0% (1/13) OR 25.0% (4/12).

PROD:	
H	

8(E)-12399A-05

NAME(S):	
FREON C-318/OCTAFLUOROCYCLOBUTANE	
CAS #:	
000115-25-3	
STUDY TYPE:	TOX CONCERN:
SEN	L

FREON C-318: INHALATION CARDIAC SENSITIZATION IN BEAGLE DOGS IS OF LOW CONCERN. THE DOGS RECEIVED A CONTROL INJECTION OF EPINEPHRINE (0.008 MG/KG) INTRAVENOUSLY PRIOR TO EXPOSURE AND A CHALLENGE INJECTION (0.008 MG/KG) AFTER BREATHING THE TEST MATERIAL FOR 5 MINUTES. CONCENTRATION AND NUMBER OF MARKED RESPONSES (DEVELOPMENT OF A CARDIAC ARRHYTHMIA) ARE AS FOLLOWS: 10.0% (1/12); 15.0% (1/6); 25.0% (2/12); OR 50% (5/6). IN ANOTHER EXPERIMENT, OXYGEN CONCENTRATION WAS ENRICHED TO 20% COMBINED WITH A CONCENTRATION OF 50% TEST SUBSTANCE FOR 5 MINUTES RESULTING IN 5/6 MARKED RESPONSES.

PROD:	L

8(E)-12399A-06

NAME(S):	
METHYL CHLOROFORM/1,1,1,-TRICHLOROETHANE	
CAS #:	
000071-55-6	
STUDY TYPE:	TOX CONCERN:
SEN	M

METHYL CHLOROFORM: INHALATION CARDIAC SENSITIZATION IN BEAGLE DOGS IS OF MEDIUM CONCERN. THE DOGS RECEIVED A CONTROL INJECTION OF EPINEPHRINE (0.008 MG/KG) INTRAVENOUSLY PRIOR TO EXPOSURE AND A CHALLENGE INJECTION (0.008 MG/KG) AFTER BREATHING THE TEST MATERIAL FOR 5 MINUTES. CONCENTRATION AND NUMBER OF MARKED RESPONSES (DEVELOPMENT OF A CARDIAC ARRHYTHMIA) ARE AS FOLLOWS: 0.21%-0.25% (0/12); 0.26%-0.56% (3/18); OR 0.97%- 1.16% (12/12).

PROD:	H

8(E)-12399A-07

NAME(S):	
ISOBUTANE/2-METHYLPROPANE	
CAS #:	
000075-28-5	
STUDY TYPE:	TOX CONCERN:
SEN	L

ISOBUTANE: INHALATION CARDIAC SENSITIZATION IN BEAGLE DOGS IS OF LOW CONCERN. THE DOGS RECEIVED A CONTROL INJECTION OF EPINEPHRINE (0. 008 MG/KG) INTRAVENOUSLY PRIOR TO EXPOSURE AND A CHALLENGE INJECTION (0.008 MG/KG) AFTER BREATHING THE TEST MATERIAL FOR 5 MINUTES. CONCENTRATION AND NUMBER OF MARKED RESPONSES (DEVELOPMENT OF A CARDIAC ARRHYTHMIA) ARE AS FOLLOWS: 2.5% (0/12); 5.0% (4/12); OR 10.0%-20.0% (6/6).

PROD:	H